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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,164	08/18/2003	Jonathan E. Greene	102323-0130	3585

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EXAMINER

DO, CHAT C

ART UNIT

PAPER NUMBER

2124

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/643,164	Applicant(s) GREENE, JONATHAN E.	
	Examiner Chat C. Do	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 47-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/20/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment filed 08/20/2004.
2. Claims 47-57 are pending in the application. Claims 47, 52, and 55 are independent claims. In Amendment, claims 47-57 are newly added. This action is made final.

Claim Objections

3. Claims 53 and 56 are objected to because of the following informalities: the applicant is advised to remove an addition period (.) at end of these claims. Appropriate correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 47-53 and 55-56 are rejected under the judicially created doctrine of double patenting over claims 1-4, 16, and 46 of U. S. Patent No. 6,609,140 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claims 1, 2-4, 16, and 46 of U.S. Patent No. 6,609,140 contain every element of claims 47-53 and 55-56 of the instant application respectively and as such anticipate claims 47-53 and 55-56 of the instant application.

“A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim. In re Longi, 759 F.2d at 896,225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). “ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 47-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Jaber (U.S. 6,792,441).

Re claim 47, Jaber discloses in Figures 1B and 9-11 a system for performing a fast Fourier transform on N ordered inputs in n stages (abstract) comprising: a non-final stage calculating (e.g. calculation rows of 152 and 162 in Figure 11) means for repetitively performing in-place butterfly calculations for n-1 stages (col. 5 lines 35-41); a final stage calculating (e.g. calculation rows of 168 and 170) means for performing a final stage of butterfly calculations including: a first loop (e.g. calculation for F0-F7 in Figure 11) means for performing a portion of the final stage butterfly calculations, the first loop means performing the set of butterfly calculations, and storing butterfly calculation outputs in shuffled order in place of the selected inputs to result in a correct ordering of transform outputs; and a second loop (e.g. calculation for F8-F15 in Figure 11) means for performing a remaining portion of the final stage butterfly calculations, the second loop means performing two sets of butterfly calculations, and storing butterfly calculation outputs from a first one of the two sets of butterfly calculations in shuffled order in place of the inputs selected for a second one of the two sets of butterfly calculations and storing butterfly calculation outputs from the second one of the two sets of butterfly calculations in shuffled order in place of the inputs selected for the first one of the two sets of

butterfly calculations to result in a correct ordering of transform outputs (col. 12 lines 20-46).

Re claim 48, Jaber further discloses in Figures 1B and 9-11 the final stage calculating means performs all butterfly calculations as radix-4 butterflies having four inputs and four outputs (e.g. based on the 4 points DFT as seen in Figure 1B).

Re claim 49, Jaber further discloses in Figures 1B and 9-11 N is a power of two (e.g. $N = 16$ which is 2^4 in Figure 11).

Re claim 50, Jaber further discloses in Figures 1B and 9-11 the non-final stage calculating means performs a first stage of radix-8 butterfly calculations followed by $n-2$ stages of radix-4 butterfly calculations (e.g. partial DFT phase in Figure 11).

Re claim 51, Jaber further discloses in Figures 1B and 9-11 the non-final and final stage calculating means include a four-fold SIMD processor for performing four radix-4 butterfly calculations at a time (e.g. 150A and 150B in parallel as seen in Figure 11).

Re claim 52, Jaber discloses in Figures 1B and 9-11 a method for performing a fast Fourier transform on N ordered inputs in n stages (abstract) comprising: performing non-final stage (e.g. calculation rows of 152 and 162 in Figure 11) calculations by repetitively performing in-place butterfly calculations for $n-1$ stages (col. 5 lines 35-41); performing final stage calculations (e.g. calculation rows of 168 and 170) by performing a final stage of butterfly calculations in a first loop (e.g. calculation for F0-F7 in Figure 11) for performing a portion of the final stage butterfly calculations and in a second loop (e.g. calculation for F8-F15 in Figure 11) for performing a remaining portion of the final stage butterfly calculations, wherein each of the butterfly calculations in the first loop and

the second loop includes storing butterfly calculation outputs in shuffled order in place of selected inputs to result in a correct ordering of transform outputs (col. 12 lines 20-45).

Re claim 53, Jaber discloses in Figures 1B and 9-11 the final stage butterflies calculations are all performed as radix-4 butterflies having four inputs and four outputs (e.g. 4 points DFT in Figure 1B).

Re claim 54, Jaber discloses in Figures 1B and 9-11 a storing twiddle factors for application in the butterfly calculations in groups of four (e.g. 4 points DFT in Figure 1B), each group having an index and the groups being stored in bit reversed order based on the index (col. 12 lines 20-45).

Re claim 55, it has same limitations cited in claim 52. Thus, claim 55 is also rejected under the same rationale as cited in the rejection of rejected claim 52.

Re claim 56, it has same limitations cited in claim 53. Thus, claim 56 is also rejected under the same rationale as cited in the rejection of rejected claim 53.

Re claim 57, it has same limitations cited in claim 54. Thus, claim 57 is also rejected under the same rationale as cited in the rejection of rejected claim 54.

Response to Arguments

8. Applicant's arguments with respect to claims 47-57 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2124

November 4, 2004



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